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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,991	01/23/2001	Miyuki Sasaki	P20481	4070
7055	7590	01/06/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			CHANNAVAJALA, SRIRAMA T	
			ART UNIT	PAPER NUMBER

2164

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/764,991

Applicant(s)

SASAKI ET AL.

Examiner

Srirama Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to office action***

1. Examiner acknowledges applicant's response under 37 CFR 1.111 filed on 8/13/2004.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/29/2004 has been entered paper no. # 16, and a non-final Office action paper 17 is as follows:
3. Examiner acknowledges applicant's amendment filed on 3/29,2004, 4/29/2004, papers 13 and 16 respectively.
4. Claims 1,3,5-6,8,10-11,13,15-16,18,21,23,25-27 have been amended, paper no.13.
5. Claims 1-27 are pending in this application.

### ***Drawings***

6. Examiner acknowledges applicant's drawings filed on 3/31/2004.

### ***Priority***

7. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Japan application no.10-252161, filed on

7 September 1998, Japan 10-208902, filed on 24 July 1998, PCT/JP99/03950 was filed on July 23, 1999.

***Information Disclosure Statement***

8. The information disclosure statement filed on 8/5/2003, paper no. # 6 and 9/10/2003, paper no. # 9 have been considered and a copy was enclosed to this office action, paper no. # 10.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-2,6-7,11-12, 21-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Maren et al., [hereafter Van Maren], US Patent No. 5579516 in view of Okuda, US Patent No. 5740445.

10. As to Claims 1, 6,11,16, 21, Van Maren teaches a system which including 'a data storage medium for recording and reproducing a file managed using a volume/file structure in which a number of data recording operations to a same area is limited' [Abstract, col 2, line 27-32], data storage medium corresponds to optical disk(s), volume/file structure corresponds to file set on a multiple volume media as detailed in Abstract, col 2, line 27-29,

'start address information for an unrecorded area existing in a volume space information being recorded in the volume space as part of root directory file management information' [ col 2, line 42-50, col 4, line 21-30, line 55-62, fig 2, col 7, line 25-26], Van maren firstly directed to storing data files on a multiple volume media set, more specifically set of files on a multiple volume media in a international standard for ISO/IEC 13346 for optical media [see Abstract], secondly, Van Maren teaches directory structure, more specifically fig 1 is an example of directory hierarchy having root directory DO, sub-directories such a sD1-D2 as detailed in col 4, line 31-34], thirdly, Van Maren specifically directed to information control blocks or ICB is part of structure which allows file entry information, i.e., writing data into optical disk would be first written on ICB for directory DO, followed by directory DO [col 4, line 55-57], start address information is integral part of Van Maren's teaching because Van Maren specifically

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directed to directory structures or files that providing an index to the data files on the disk or set of disks, further Van Maren also suggests for example lists the address of its parent directory, i.e., root directory lists the address of its own ICBs that would have start addresses, as best understood by the examiner, address that specifies specific location of a data item or first element of a set of data items within a storage or output device which may be optical disk or any ISO/IEC standard data storage devices as suggested by Van Maren [see col 4, line 21-29], further it is noted that start address of an unrecorded area in a directory corresponds to the space that has been allocated for each information control block that helps to built directories starting with directory DO that would have starting address [col 7, line 25-26]

It is however, noted that Van Maren does not specifically teach 'address information for a root directory', although Van Maren specifically suggests for example directory hierarchy structure such as detailed in fig 1 where root directory DO having various sub-directories such as D1,D2 and like, further Van Maren also suggests storage of files, specifically file name is ASCII form of ICB address or ICB address as a file name [see col 8, line 9-14]. On the other hand, Okuda disclosed 'address information for a root directory' [fig 5, col 5, line 16-22, line 45-48, line 62-67]

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Okuda into storing data files on a multiple volume media set of Van Maren et al., because both Van Maren and Okuda

also directed to file structure, more specifically both are directed to organizing, managing various files in a directory information [see Okuda: Abstract], Van Maren {Abstract}, both are from same field of endeavor.

One of ordinary skill in the art at the time to applicant's invention to combine the references because that would have allowed users of Van Maren et al., allocate specific address with a serial number to the root directory where linking information root directory entries are linked to the next directory entries [see Okuda: col 5, line 35-42, col 6, line 37-52], further it allows to search directory information using serial number from the directory table.

11. As to Claims 2, 7, 12, 17, 22, Van Maren teaches a system which including 'start address information is recorded using an indirect entry for managing a root directory file recording area' [fig 2, col 4, line 63-67], root directory corresponds to fig 1, DO.

12. Claims 3-4, 8-9, 13-14, 18-19, 23-24, rejected under 35 U.S.C. 103(a) as being unpatentable over Leonhardt et al., [hereafter Leonhardt], US Patent No. 5485321 in view of Okuda, US Patent No. 5740445.

13. As to Claims 3, 8, 13, 18, 23, Leonhardt teaches a system which including 'a data storage medium for recording and reproducing a file managed using a volume/file structure in which a number of data recording operations to a same are is limited' [Abstract, col 1, line 6-13], data storage medium for recording and reproducing corresponds to Leonhardt's computer data storage and recording, retrieving such as removable disks or magnetic type devices or optical disks and like as detailed in col 1, line 31-42], 'invalid data not used for retrieving volume/file structure, the invalid data being recorded before and after volume/file structure and a data file' [col 1, line 45-48, col 12, line 45-64, col 14, line 15-41, col 20, line 50-56], Leonhardt is directed to format and method for recording that is associated with control logic, more specifically, data storage method for linearly recording data blocks on a recording media [col 3, line 10-14], further it is noted that Leonhardt specifically suggests for example recording header would have both specific fields designated for valid and invalid data [col 12, line 45-64, col 20, line 50-56], Leonhardt suggests for example virtual beginning of tape or VBOTx marker has ability to designates the beginning of a valid collection of data blocks, also VBOTx marker allows to track, and record valid and invalid data as detailed in fig 3, col 12, line 55-67, col 13, line 1-31],



'invalid extent management information for managing an invalid data recording area, the invalid extent management information being recorded in the volume space as part of root directory file management information' [col 1, line 45-48, col 12, line 45-64, col 20, line 50-56, col 21, line 57-67], recording valid or invalid data are integral part of Leonhardt's teaching because Leonhardt specifically suggests for example header field are designated for valid and invalid data that are automatically set during Scratch data mode for optimizing the recording process as detailed in col 20, line 50-64

It is however, noted that Leonhardt does not specifically teach 'address information for a root directory'. On the other hand, Okuda disclosed 'address information for a root directory' [fig 5, col 5, line 16-22, line 45-48, line 62-67]

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Okuda into format and method for recording optimization of Leonhardt et al., because both Leonhardt and Okuda directed to information or data recording medium, more specifically Leonhard is directed to performance optimized computer data recording media format [see Abstract], while Okuda is directed to directory information management for recording medium [see Abstract].

One of ordinary skill in the art at the time to applicant's invention to combine the references because that would have allowed users of Leonhardt et al., allocate specific

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address with a serial number to the root directory where collection of related data blocks on the recording tracks within a sequence of one or more group allocation units root directory entries are linked to the next directory entries [see Okuda: col 5, line 35-42, col 6, line 37-52], further it allows to both Leonhardt and Okuda search specific information related to data fields or files [see Okuda: col 6, line 4-15; Leonhardt: fig 6].

14. As to Claims 4, 9, 14, 19, 24, Leonhardt teaches a system which including 'invalid extent management information is recorded using an allocation descriptor for managing a root directory file recording area' [col 20, line 50-64, col 21, line 57-67, col 22, line 1-14].

15. Claims 5,10,15, 20, 25-27, are rejected under 35 U.S.C. 102(a or b) as being anticipated by Caffarelli, Fabrizio [hereafter Caffarelli], EP0730274A2

16. As to Claims 5, 10, 15, 25-27, Caffarelli teaches a system which including 'a data storage medium for recording and reproducing a file managed using a volume/file structure in which a number of data recording operations to a same area is limited' [see Abstract],

'address information for a file set descriptor' [page 6, col 9, line 41-46], Caffarelli specifically teaches each file/directory record that including starting block address;

'root directory file management information is plurality of recorded as main chaining information and reserve chaining information' [page 9, col 15, line 23-46,, root

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directory corresponds to root directory that is assigned ID no. 1 as detailed in fig 9, chaining information corresponds to directory, subdirectory and file is identified by unique identifier is part of directory chain to locate required information as detailed in col 15, line 36-38],

'first address information corresponding to an area in which the main chaining information and reserve chaining information are recorded at a beginning of a volume space is recorded as part of a file set descriptor' [col 15, line 47-58, col 16, line 1-13, page 10, col 18, line 40-50],

'second address information corresponding to an area in which the main chaining information and reserve chaining information is update recorded is recorded as part of main chaining information and reserve chaining information' [col 13, line 31-46, col 16, line 46-58, col 17, line 1-6], reserve information area corresponds to Caffarelli fig 10, element 480, 505.

***Response to Arguments***

a) In response to Applicant's REMARKS, concerning the 35 U.S.C. 103(a) rejection of Claims 1-2,6-7,11-12, 21-22, as being unpatentable over Van Maren et al., [hereafter Van Maren], US Patent No. 5579516 in view of Okuda, US Patent No. 5740445.

It is noted that Applicant's remarks, at pages 2-12 of the response, are merely repeating the language of the claim, especially pages 4-5, 9-11, without addressing Examiner's particular interpretation of the reference, as presented in the previous Office action, and without specifying how the instant amendments or remarks address the issues raised by Examiner. Accordingly, Examiner repeats the arguments previously presented.

b) At page 4, claims 1,6,11,16,21, applicant argues "there is no disclosure in VAN MAREN of including a start address of an unrecorded area in the root directory. Moreover, VAN MAREN does not disclose any use of unrecorded area.

As to the above argument [b], as best understood by the examiner, Van Maren et al. is directed to storing data files on a multiple volume media set or optical disks, more specifically storing set of files on a multiple volume media that supports ISO/IEC 13346 standard for at minimum optical media [see Abstract], secondly, It is however, noted that Van Maren specifically teaches "before the data files are written to optical disk, a block of addresses are allocated on the optical disks for an ICB table. Once this

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space has been allocated, the data files may be written to the optical disks" [see col 2, line 48-52]. As noted above, Van Maren teaches directory structure, more specifically fig 1 is an example of directory hierarchy having root directory DO, sub-directories such as sD1-D2 as detailed in col 4, line 31-34], also, Van Maren specifically directed to information control blocks or ICB is part of structure which allows file entry information, i.e., writing data into optical disk would be first written on ICB for directory DO, followed by directory DO [col 4, line 55-57], start address information is integral part of Van Maren's teaching because Van Maren specifically directed to directory structures or files that providing an index to the data files on the disk or set of disks, further Van Maren also suggests for example lists the address of its parent directory, i.e., root directory lists the address of its own ICBs that would have start addresses, as best understood by the examiner, address that specifies specific location of a data item or first element of a set of data items within a storage or output device which may be optical disk or any ISO/IEC standard data storage devices as suggested by Van Maren [see col 4, line 21-29], further it is noted that start address of an unrecorded area in a directory corresponds to the space that has been allocated for each information control block that helps to built directories starting with directory DO that would have starting address [col 7, line 25-26]

c) At page 4, claims 1,6,11,16,21, applicant argues that OKUDA does not disclose the use of a start address for an unrecorded area and further does not disclose the use of a start address for an unrecorded area in the root directory.

As to the above argument [c], Okuda is directed to generating directory information to manage file using directories, more specifically directed to directory management for recording medium [see Abstract], As noted from Okuda's fig 2, is specifically teaches directory entry, for example file name, attribute, position information that indicates sector address, file size that indicates a size especially used sector count, a byte count that related to directory entry, furthermore, without proper entries made to the directories, it would not have been possible both VAN MAREN and OKUDA to read/write operations, therefore, start address, position information, file size, identifying directory entry and like are integral part of Okuda's teaching [see col 3, line 48-63].

d) At page 6, claims 3,8,13,18,23, applicant argues that LEONHARDT et al. does not disclose any invalid extent management information'

As to the above argument [d], Leonhardt et al. is directed to format and recording optimization method, more specifically computer data recording media format and associated logic for data storage [see Abstract], Leonhardt also teaches recording header would have both specific fields designated for valid and invalid data for example as detailed in col 12, line 45-64, col 20, line 50-56, furthermore, recording valid or

invalid data are integral part of Leonhardt's disclosure because Leonhardt specifically teaches "the header field designation for valid/invalid data are automatically set" [see col 20, line 55-56], therefore, at minimum, Leonhardt suggests both valid and invalid data management.

e) At page 8-11, claims 5,10,15,25-27, applicant argues that CAFFARELLI do not disclose multiple sets of chaining information'.

As to the argument [e], As best understood by the examiner, Caffarelli is directed to compact disc recording system, more specifically, logical data and file/directory structure. As noted from Caffarelli that directory structure contains entries for each parent directory, further each entry have subfield in associated with parent directory, also each subfield also contains number of entries that is equivalent to directories, subdirectories and associated files [see col 15, line 47-58, col 16, line 1-4], it is also noted that various flags associated with respective attributes that indicate update status of a file [see col 16, line 5-8]. Caffarelli also suggests address field for each file and/or directory that including total size of the file/directory records, and Caffarelli also specifically teaches relationship between directory, subdirectory and file structure, Hence, without specific address information, Caffarelli could not have built file/directory structure as detailed in col 18, line 40-50. Therefore, as best understood by the examiner, Caffarelli teaches multiple sets of chaining information because Caffarelli's file/directory

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structure supports inter-relationship among directory, subdirectory, file information, entries to be recorded and like.

Examiner applies above discussed arguments to dependent claims 2,4,7,9,12,14,17,19,22, and 24.

Therefore, applicant's remarks are deemed not to be persuasive, and claims 5,10,15,20,25-27 stand rejected under 35 USC 102 (a or b) as being anticipated by Caffarelli.



***Conclusion***

**The prior art made of record**

- |    |               |         |
|----|---------------|---------|
| a. | US Patent No. | 5579516 |
| b. | US Patent No. | 5485321 |
| c. | EP0730274A2   |         |
| d. | US Patent No. | 5740445 |

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

- |    |               |         |
|----|---------------|---------|
| e. | US Patent No. | 5740422 |
| f. | US Patent No  | 6173291 |
| g. | US Patent No  | 5119291 |
| h. | US Patent No  | 6456783 |
| i. | US Patent No  | 4791623 |
| j. | US Patent No  | 5778392 |
| l. | US Patent No  | 5347651 |
| m. | US Patent No. | 5500887 |
| n. | US Patent No. | 5875476 |
| o. | US Patent No. | 6173291 |
| p. | US Patent No. | 5799212 |
| q. | US Patent No. | 6385389 |

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popvici, can be reached on 571-272-4083. The fax phone numbers for the organization where the application or proceeding is assigned is 703/872-9306

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

SC  
*Patent Examiner.*  
December 28, 2004.

  
SRIRAMA CHANNAVAJJALA  
PRIMARY EXAMINER